

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A system for transferring a data stream comprising data packets separated by non-packet words from a first clock domain to a second clock domain, the clock domains having similar but not necessarily identical clock frequencies, comprising:

an elasticity buffer consisting of at least three and not more than five storage locations:

A4 means for writing the data stream into the elasticity buffer in a cyclic sequence of said storage locations by means of a write pointer under the control of ~~the clock frequency~~ a write clock in the first clock domain,

means for reading the data stream out of said storage locations of the elasticity buffer in ~~asaid~~ a cyclic sequence by means of a read pointer under the control of ~~the clock frequency~~ a read clock in the second domain;

means for reading the data stream out of said storage locations of the elasticity buffer in ~~asaid~~ a cyclic sequence by means of a read pointer under the control of ~~the clock frequency~~ a read clock in the second domain;

means a slip detector for monitoring the write and read pointers to determine the relative cyclic phase of said two sequence pointers, said slip detector:

(i) ~~providing to provide~~ an anticipatory signal indicating that the ~~reading sequence~~ approaches proximity to the ~~writing sequence~~ reading clock is too late when the write pointer denotes a first one of said storage locations and the read pointer denotes the next one of said storage locations in said cyclic sequence;

(ii) indicating that said reading clock is too early when the write pointer denotes said first one of said storage locations and the read pointer denotes said first one of said storage locations in said cyclic sequence;

means in the first clock domain for inserting in response to said anticipatory signal a non-packet word into said data stream; and

means in the second clock domain for detecting the existence of the inserted non-packet word and for causing the buffer to advance the reading cycle thereby to discard the said inserted non-packet word.

2. (Currently Amended) A system ~~according to~~ as in claim 1 wherein the inserted non-packet word is an idle byte.

3. – 5. Cancelled.

6. (Currently Amended) A system for transferring a data stream of data packets separated by non-packet words, said system including:

a ~~receiver means~~ media access control device;

a ~~transmitter means~~ physical layer device;

an elasticity buffer consisting of at least three and not more than five storage locations;

means in said physical layer device for writing the data stream into the elasticity buffer in a cyclic sequence of said storage locations by means of a write pointer under the control of ~~a first clock frequency in a first clock domain~~ a write clock,

means in said media access control device for reading the data stream out of said storage locations of the elasticity buffer in a said cyclic sequence by means of a read pointer under the control of ~~a second clock frequency in a second clock domain~~ a read clock, said ~~second clock frequency being~~ read clock having a frequency nominally the same as the ~~first clock~~ frequency of said write clock;

~~means~~ a slip detector for monitoring the write and read pointers to determine the relative cyclic phase of said two pointers ~~sequences~~, said slip detector:

(i) ~~providing to provide~~ an anticipatory signal indicating that ~~the reading sequence approaches proximity to the writing sequence~~ reading clock is too late when the write pointer denotes a first one of said storage locations and the read pointer denotes the next one of said storage locations in said cyclic sequence;

(ii) indicating that said reading clock is too early when the write pointer denotes said first one of said storage locations and the read pointer denotes said first one of said storage locations in said cyclic sequence;

means in the first clock domain for inserting in response to said anticipatory signal a non-packet word into said data stream; and

means in the second clock domain for detecting the existence of the inserted non-packet word and for causing the buffer to advance the reading cycle thereby to discard the said inserted non-packet word.

7. – 11. Cancelled.

12. (Currently Amended) A buffer system for transferring a data stream essentially consisting of a succession of data words from a first clock domain to a second clock domain, said system comprising:

an elasticity buffer having a maximum of five storage locations whereby the buffer can store a maximum of five data words;

means for writing the data stream into the elasticity buffer in a cyclic sequence of said storage locations by means of a write pointer under the control of ~~the clock frequency~~ a write clock in the first clock domain,

means for reading the data stream out of said storage locations of the elasticity buffer in asaid cyclic sequence by means of a read pointer under the control of ~~the clock frequency~~ a read clock in the second domain;

~~means~~ a slip detector for monitoring the write and read pointers to determine the relative cyclic phase of said two pointers ~~sequences~~, said slip detector;

Alt. Cont.
(i) ~~providing to provide~~ an anticipatory signal indicating that the ~~reading sequence approaches proximity to the writing sequence~~ reading clock is too late when the write pointer denotes a first one of said storage locations and the read pointer denotes the next one of said storage locations in said cyclic sequence;

(ii) indicating that said reading clock is too early when the write pointer denotes said first one of said storage locations and the read pointer denotes said first one of said storage locations in said cyclic sequence.

13. (Currently Amended) A system ~~according to~~ as in claim 12 wherein each of said storage locations stores one data byte.

14. Cancelled.

15. (New) A system as in claim 1 wherein said elasticity buffer consists of five of said storage locations and said slip detector indicates;

allowable jitter when said write pointer denotes said first one of said storage locations and said read pointer denotes the next storage location but one after said first one of said storage locations in said cyclic sequence;

synchronized operation of said elasticity buffer when said write pointer denotes said first one of said storage locations and said read pointer denotes the next storage location but two after the first one of said storage locations in said cyclic sequence; and

allowable jitter when said write pointer denotes said first one of said storage locations and said read pointer denotes the next storage location but three after said first one of said storage locations in said cyclic sequence.

16. (New) A buffer system as in claim 12 wherein said elasticity buffer consists of five of said storage locations and said slip detector indicates:

allowable jitter when said write pointer denotes said first one of said storage locations and said read pointer denotes the next storage location but one after said first one of said storage locations in said cyclic sequence;

synchronized operation of said elasticity buffer when said write pointer denotes said first one of said storage locations and said read pointer denotes the next storage location but two after said first one of said storage locations in said cyclic sequence; and

allowable jitter when said write pointer denotes said first one of said storage locations and said read pointer denotes the next storage location but three after said first one of said storage locations in said cyclic sequence.

17. (New) A method for transferring a data stream comprising data packets separated by non-packet words from a first clock domain to a second clock domain, the clock domains having similar but not necessarily identical clock frequencies, said method comprising:

maintaining an elasticity buffer consisting of at least three and not more than five storage locations;

writing the data stream into the elasticity buffer in a cyclic sequence of said storage locations by means of a write pointer under the control of a write clock in the first clock domain,

reading the data stream out of said storage locations of the elasticity buffer in said cyclic sequence by means of a read pointer under the control of a read clock in the second domain;

monitoring the write and read pointers to determine the relative cyclic phase of said two pointers thereby:

(i) providing an anticipatory signal indicating that the reading clock is too late when the write pointer denotes a first one of said storage locations and the read pointer denotes the next one of said storage locations in said cyclic sequence;

(ii) indicating that said reading clock is too early when the write pointer denotes said first one of said storage locations and the read pointer denotes said first one of said storage locations in said cyclic sequence;

inserting in the first clock domain in response to said anticipatory signal a non-packet word into said data stream; and

detecting, in the second clock domain, the existence of the inserted non-packet word and causing the buffer to advance the reading cycle thereby to discard the said inserted non-packet word.

18. (New) A method as in claim 17 wherein the inserted non-packet word is an idle byte.

19. (New) A method as in claim 17 wherein said elasticity buffer consists of five of said storage locations and said method indicates;

allowable jitter when said write pointer denotes said first one of said storage locations and said read pointer denotes the next storage location but one after said first one of said storage locations in said cyclic sequence;

synchronized operation of said elasticity buffer when said write pointer denotes said first one of said storage locations and said read pointer denotes the next storage location but two after said first one of said storage locations in said cyclic sequence; and

allowable jitter when said write pointer denotes said first one of said storage locations and said read pointer denotes the next storage location but three after said first one of said storage locations in said cyclic sequence.
